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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/748,014	12/30/2003	Sun-Chueh Kao	2002U035.US	6457

7590 03/23/2007  
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HOUSTON, TX 77056-2746

EXAMINER

RABAGO, ROBERTO

ART UNIT	PAPER NUMBER
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1713

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	03/23/2007	PAPER

**Please find below and/or attached an Office communication concerning this application or proceeding.**

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

## Office Action Summary

Application No.

10/748,014

Applicant(s)

KAO, SUN-CHUEH

Examiner

Roberto Rábago

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --  
Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 01 February 2007.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 38-65 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 38-65 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892)   | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)                       | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____  |

### DETAILED ACTION

1. A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on 2/1/2007 has been entered.

### ***Claim Rejections - 35 USC § 112***

2. Claims 38-44, 48-55 and 60-65 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

(a) The phrase "methylalumoxane-activatable compound" is not sufficiently described in the specification to allow the ordinary skilled worker to determine the metes bounds of the claim. The specification provides numerous examples of catalyst compounds within the stated scope of a methylalumoxane-activatable compound, and the claims were previously examined under the assumption that a methylalumoxane-activatable compound is in fact a polymerization catalyst compound which is rendered catalytically active for polymerization upon contact with methylalumoxane. However, further close reading of the specification reveals no definition of what a methylalumoxane-activatable compound actually is; specifically, there no description of

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any required structure or function to this component, and there is no definition of what kind of activity is required for the concept of "activatable." The intended meaning of a component which has neither required structure nor required function cannot be determined.

(b) In claim 60 (and claim 61 by dependency), in the embodiment "diimine-based ligands of group 8 to 10 metal catalyst compounds" it cannot be determined whether the intended embodiment is: (a) only the ligand (which is capable of forming a complex with a group 8 to 10 catalyst compounds), or (b) a group 8 to 10 metal catalyst compound with a diimine ligand.

(c) In claim 65, the intended scope of the claimed ratio cannot be determined because the claim does not state the quantitative basis for the ratio (i.e., mass ratio, metal molar ratio, etc.)

### ***Claim Rejections - 35 USC § 102***

3. Claims 38-50, 52-59 and 61-64 are rejected under 35 U.S.C. 102(b) as being anticipated by Reddy et al. (US 6,214,949) for the reasons set forth in item 5 of the Office action mailed 11/2/2006 and the Advisory action mailed 12/21/2006.

Applicant's arguments filed 2/1/2007 have been fully considered but they are not persuasive. Applicants persist in arguing that insufficient basis exists for concluding that in an intimate mixture of two metallocenes in solution and a supported solid ZN catalyst, at least a non-zero amount of at least one metallocene will exist on the solid surface. However, the examiner's premise is based upon elementary concepts of

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adsorption equilibrium, wherein in a system such as that shown in Reddy, an adsorption/desorption equilibrium will exist between metallocenes in solution and those sorbed to the solid surface; furthermore, in view of the fact that metallocenes are known to have affinity for such highly active heterogeneous surfaces, there is reasonable basis to conclude that the position of the equilibrium will necessarily be non-zero (i.e., at least a non-zero amount of at least one metallocene on the surface of the supported ZN catalyst). Applicants have provided nothing substantive which would lead to a conclusion that the support would be entirely devoid of metallocene.

Applicants further argue that the reference process would not result in an “appreciable amount of the unsupported catalyst on the support,” and further that such mixing procedures would give rise to only “a small amount of metallocenes that actually adsorbs on the support.” However, the claims do not require “appreciable amounts”, nor do they require anything greater than “small amounts.” The issue is whether any amount at all will be resident on the surface of the ZN composition. Applicants have provided nothing which would lead the ordinary skilled worker to conclude that no metallocene would exist on the surface. Applicants further speculate that any metallocene which may be adsorbed would be inactive as a catalyst. However, the reference authors have stated that the metallocenes added to the system are catalysts, and there is no basis for the conclusion that 100% of adsorbed metallocene would be inactive for any conceivable catalytic process.

Applicants further argue that the reference does not teach “the assembly of a first and second catalyst compound on a common support.” However, claim 38, section (a),

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include any process of "assembly" which results in a non-zero amount of two catalyst compounds existing on a common support; as such, the reference process of mixing a supports ZN catalyst with a solution of two metallocenes, wherein at least a non-zero amount of at least one of the metallocenes adsorbs to the ZN catalyst surface, is within the claimed scope.

Applicants' remarks directed to purported advantages of the claimed catalyst over those of the prior art are not effective to rebut a rejection under 35 USC 102.

Applicants further incorrectly assert that the claims are directed to "a wholly supported active metallocene-containing catalyst for polymerization." In fact, independent claim 38 includes nothing which requires that any metallocene be wholly supported, nor that it include a metallocene at all, nor that it be effective for polymerization. In fact, applicants' scope of claimed catalyst is exceedingly broad, including all embodiments wherein any amount of any two catalyst materials active for any reaction to any degree under any condition exists on any support, further contacted with any aluminosilicate activatable compound.

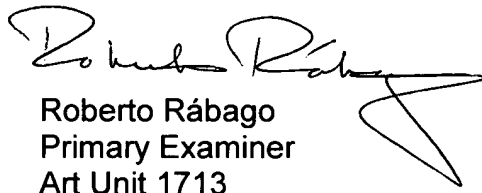
Regarding new claim 64, the product-by-process limitation directed to a precontacting step is not seen to convey any structure to the claimed composition such that the composition of Reddy would no longer anticipate the claim.

4. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Roberto Rábago whose telephone number is (571) 272-1109. The examiner can normally be reached on Monday - Friday from 8:00 - 4:00.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Wu can be reached on (571) 272-1114. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

  
Roberto Rábago  
Primary Examiner  
Art Unit 1713

RR  
March 15, 2007